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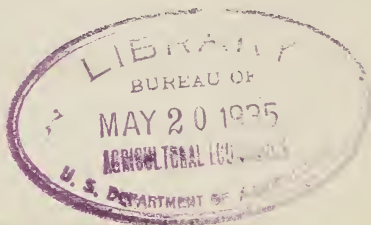


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
SOIL EROSION SERVICE

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SOIL EROSION SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

ELM CREEK WATERSHED--CENTRAL TEXAS

NEWS LETTER-----NO. 4.

TEMPLE, TEXAS.

SEPTEMBER, 1934.

IN MEMORIAM

Edwin S. Harris

ECW CAMP FOREMAN

KILLED IN AUTOMOBILE ACCIDENT

SEPTEMBER 9, 1934.

HE WILL BE SADLY MISSED BY HIS

FELLOW WORKERS AND FRIENDS.

TERRACE OUTLETS AND GULLY CONTROL

No structure has yet been built that did not require some maintenance in order to remain effective for the purposes intended. We all know that barns, fences, houses and all farm structures require maintenance and care or they will soon become useless for the purposes for which they were built; even so are permanent structures of concrete, rock masonry or other material which are built for the purpose of controlling terrace outlets and gullies and will soon be lost if not properly cared for. Let us discuss a few points to note and watch in the maintenance of these structures.

First, and most treacherous, is the problem of summer cracks. This is one problem which can not be overcome by any practicable type of artificial structure and requires the direct attention of the farmer in order to prevent failure. If rain threatens it is a good idea to go out and fill with dirt all the cracks which are close to the control structure. This will prevent water from washing through the cracks around the structure and washing it out. If it is not possible to do this before the rain be certain to check up on every outlet after the rain and in case the water has washed around any of them, make repairs by filling the wash right then, or as quickly as possible. If this is not done the next rain may completely undermine the structure and it will be lost as far as the protection it gives is concerned.

Vegetation planted around the wing walls will help to reduce the size of the summer cracks and at the same time will not harm the cultivated crop in any way. For this purpose, Buffalo grass, Dallis grass and any of the perennial grasses are recommended. Bermuda grass is the best of all these, but care must be used in the cultivation where Bermuda grass is planted in order to prevent

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spreading and is therefore recommended only where such care will be exercised. It has been said that a word to the wise is sufficient and we all like to consider ourselves wise men. Therefore let us be as we would like to consider ourselves, and maintain our terrace outlets and gully control structures in such a manner that they will be a lasting benefit to ourselves and our children.

### ECW CAMP NEWS

#### A WORD OF WARNING

We do not know definitely how long the CCC camps will be available for work on terrace outlets and gully control. Work will be done on the farms as rapidly as possible, and the farms will be taken as fast as the terraces and ditches are prepared for the structures. If you want permanent control structures you must prepare for them as quickly as possible.

Due to a lack of preparedness for the work, on the part of farmers, it was necessary for the camps to do some other work during the last two weeks.

We are glad to announce that K.S. Hull, Jr. has been added to the staff of ECW camp at Temple, Texas. Mr. Hull will act in the capacity of foreman.

An excellent record was made by the two ECW camps in the construction of 465 erosion control structures during the month of August. The Troy camp has formerly been building only rock masonry structures, but it is now changing to formless concrete on account of the fact that it has been proven that the formless concrete construction is the cheaper.

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We will have to hand it to these enrollees of the camps because they have done good work of lasting benefit, which is an accomplishment to be proud of.

PROGRESS REPORT AS OF AUGUST 31st, 1934.

1. 584 farmers have signed contracts to co-operate with the Soil Erosion Service.
2. 666,797 feet of terrace lines were run during the month of August. Total feet of lines run up to August 31st is 3,518,244.
3. 461,601 feet of terraces were constructed during the month of August. Total feet of terraces constructed up to August 31st is 1,304,739.
4. 465 dams or spillways were constructed for gully control and terrace outlet protection during the month of August. Total dams built up to August 31st is 1,083.
5. 40 new fresnoes have been received, making a total of 65 fresnoes now in use.

CROP ROTATIONS

DATA TAKEN FROM TEX. AGRI. EXP. STATIONS

It is common knowledge that yields of cotton in the Blackland section of Central Texas are gradually declining. The almost continuous cropping of these soils to cotton year after year without much, if any, effort being made to maintain or increase their productiveness by the use of fertilizers and manures, crop rotations, or the prevention of soil washing, has resulted in a reduction in the productiveness of a region once thought to be inexhaustible in its fertility. The use of fertilizers has not been successful in restoring these soils to their original productiveness. Rotation or changing of



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crops on the land appears to offer the most promising immediate solution of the problem. Rotation of crops distributes the labor, helps keep down the weeds, controls insect pests and crop diseases, and makes possible the production of feed crops for home use or the production of livestock.

Cotton, corn, wheat and oats produced larger yields in rotation than when grown continuously on the same land year after year as shown in years of experiments with several rotations at Temple, Texas. Yields of cotton have been doubled; corn increased 87 %; wheat, 55 %; and oats, 17 % by rotations, as compared with continuous cropping. Rotations of crops reduced root rot of cotton from 39.7 % to 4.8 %.

#### S E S TO HELP IN ESTABLISHING LEGUMES IN THE ROTATION

The Soil Erosion Service is anxious to help all farmers in the watershed who want to establish a good crop rotation system. The Service is ordering vetch, Austrian winter peas and Hubam to furnish to the farmers in their rotation. Enough seed will be furnished to enable the farmer to harvest enough seed for another year. The farmer who will rotate cotton, corn or sorghums, and **oats**, and plant a legume to turn under will be furnished enough seed of the legumes to plant 2 to 5 acres. The crops must, of course, be planted on the contour with the terraces and should be stripped Blank forms for this agreement and for the seed may be had at the Soil Erosion Service.

#### BUILDING AND MAINTAINING TERRACES

When beginning to terrace a field, any of the terrace lines may be run first, but it is of the utmost importance that the top line be



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built first. Start building the terraces by building the top terrace first, and then each succeeding one down the hill until all the terraces have been built. If terraces are not built in this manner, a rain may come before the upper terraces are built, causing too much water to come into the terrace below, resulting in a break in the terrace which might cause a gully.

When starting to build terraces, run the grader so that the dirt will be pushed together in the furrow after the first round has been completed. Start the second round by running the grader so that you will make about a six inch cut. Then push this dirt up in the center again. Start the next round by making another six inch cut, or the amount of soil that you can move at one time. Each time after making a cut push the dirt all the way up on the terrace, and continue this procedure until you have made the terrace at least twenty-four feet wide and twenty-four inches high.

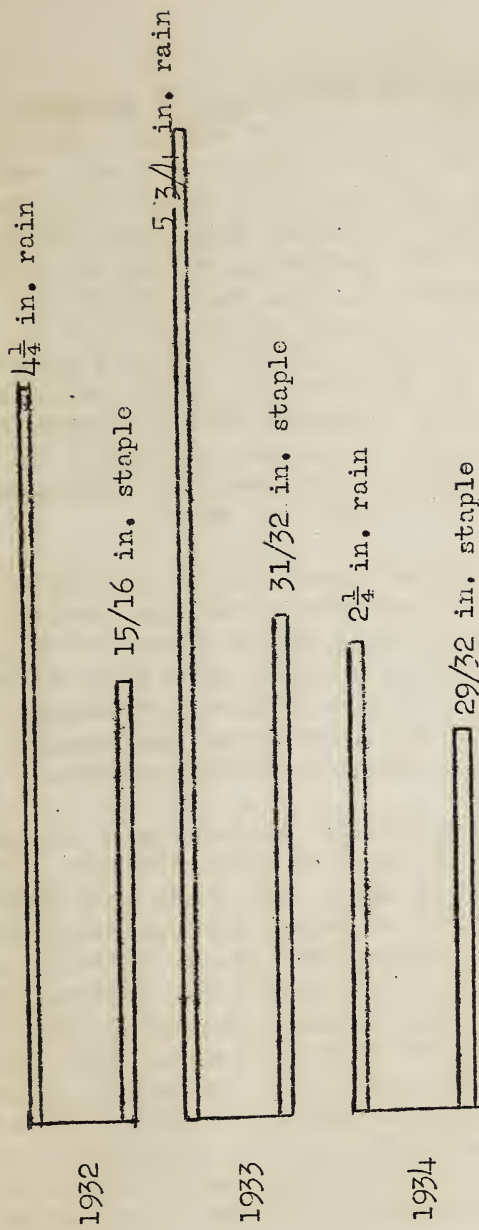
Another very important point in terrace building is making the fills in the terrace where it crosses a gully or wash. Just as soon as a terrace is built the fills should be made. In the event a rain should come before these fills are made, it would wash away the soil that has been placed there by the grader. It might also cause a bad gully before you can could possibly make the fill. The dirt for these fills should always be taken from the waterway of the terrace, especially from the higher places. The reason for taking the dirt from above the waterway of the terrace rather than below is that good soil will be deposited on these places sooner, for the soil always has a tendency to move down hill. The fills should be made about twenty-five per cent higher than the remainder of the terrace, for the loose soil will usually settle that

much. Making these fills immediately and high enough at the beginning is a big factor in successful terracing. These fills can best be made with a fresno.

A very frequent error in terrace building is improper care of terrace outlets. Just as soon as the terraces are built the outlets should be opened so that the mouth of the terrace is at least eight to ten feet wide. The outlet should be shallow and not any deeper than the waterway of the terrace. If the outlets are widened the water spreads over a wide area and washing is reduced to a minimum. This is very important where terraces empty on pasture or meadows.

Once the terraces are built sufficiently high and wide with good fills, the job of maintaining the terraces is ~~not so difficult~~. The first year or two these terraces should be cleaned out with a grader so that the height and width will be maintained. After that a deep backfurlowing each year will be sufficient to keep the terraces in good condition. The first year after the terraces are constructed they should be watched carefully for any weak places. These weak spots can usually be found after the first rain, and if they are found should be remedied immediately. Sometimes after a rain a man can take a shovel and repair weak places which might otherwise wash out completely if you wait for the land to get dry enough to work with a team and fresno. Proper building and maintenance of terraces is the greatest insurance against soil erosion.

All terraces should be sowed to some feed crop such as oats, sudan or cane the first year. Should the terraces settle and the water run over, these crops will prevent severecutting through of the terrace.



GRAPH SHOWING RELATION BETWEEN RAINFALL AND  
STAPLE LENGTH IN THE YEARS 1932, 1933 & 1934.

SEE ARTICLE ON NEXT PAGE

ECONOMIC SURVEY

We are making a study of the effect of moisture in the soil on the staple length of cotton. The chart on the preceding page gives figures for only one gin territory where we had complete records for 3 years. The rainfall was for the period from June 1st to Aug. 15th. We consider this period as having the most effect on staple production. You will notice the heaviest rainfall produced the longest staple and the least amount the shortest staple. Should these figures hold true for a period of years on the entire watershed, we can feel there is some relation between amount of moisture in soil and length of staple produced. We also hope to determine whether terraces will hold enough moisture to affect the length of staple.

In the older agricultural sections of the United States terracing and related methods of erosion control have been practiced to a limited extent for more than 40 years. Farmers in those sections have been driven by depleted yields to seek some means of regaining the crop-producing power of their lands, and terracing has been recognized as a solution to this problem.

Both farmers and agricultural leaders have witnessed the "bringing back" of much of these thinner, crop-worn and badly eroded lands. The lands have once more yielded profitable returns, made possible by terracing and careful tillage practices. While it is obvious that terracing eroded farm lands is beneficial, very little has been done toward recording actual effects on crop yields and farm incomes on land that is still productive, but eroded to a noticeable degree. In order to determine the effects resulting from erosion control work being done in the Elm Creek Watershed, Dr. H.V. Geib and other agricultural leaders have planned an economic study to be made in connection



with the Soil Erosion Service, in cooperation with The Texas Agricultural Experiment Station, College Station, Texas.

By surveying perhaps 350 farms throughout the watershed, definite information is to be secured on the economic and social conditions of the communities. In other words, we expect to get a fairly accurate picture of the farming program of the area, both on crop and livestock management practices. A complete inventory of the farm improvements and equipment is taken to indicate the condition of the entire farm set-up. We hope to use this information to establish an average mark of the prevailing agricultural conditions existing prior to terracing, from which changes may be measured or at least definitely indicated.

Detailed farm records are to be kept for several years by 150 or more farmers in order to determine the effect of terracing and other soil erosion control practices on crop yields and farm income. To serve as a "check" on the work records will be kept on 50 untterraced farms adjacent to and of similar soil type as terraced farms. It may be necessary to include some farms in this group that only border the Elm Creek Watershed.

Each year the farm records will be carried to College Station, where the information will be carefully studied and analyzed. The Agricultural Experiment Station will assist in giving cooperating farmers the exact results of the work, and the summary of each year's study will be passed on to the farmers. The farmers should be able to use the results of the work to aid them in adjusting their farming program toward the most profitable management; however, such decisions will be left entirely to the individuals. These records may also be used for furnishing information on the farm production in connection with the acreage reduction program of the United States Department of Agriculture.

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One vital feature of the study is the cotton staple work being carried on in 12 gin communities of the watershed, in cooperation with the Cotton Grade and Staple Office in Austin, under the United States Department of Agriculture, Division of Cotton Marketing. Samples are secured from each bale of cotton ginned in the area and sent to Austin for classing. Veteran government classers determine the grade and staple length of each bale and return this classification sheet to ginners within 4 or 5 days after ginning. This service enables the cotton growers to ascertain the exact market value of their cotton in time to sell. It is hoped that this service can be offered to farmers in the entire watershed for the 1935 season. This will not only spread the direct benefits to cotton growers, but will serve to cumulate valuable data on the relations of staple length of cotton to soil moisture conditions.

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Jeremiah 12-(11-12)

"They have made it (the land)  
desolate and, being desolate,  
it mourneth unto me. The whole  
land is made desolate because  
no man layeth it to heart. The  
spoilers have come upon all high  
places through the wilderness."

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GEOLOGICAL SURVEY

The Geological Survey, cooperating with the Soil Erosion Service, is collecting data on runoff of water and silt in the area. To better study the runoff, rain gauges have been located over the area. At present there are 18 standard Weather Bureau type rain gauges in the Elm Creek Watershed. In addition to these there are 3 recorder type rain gauges which keep a continuous record not only of the amount of rainfall but also the rate of rainfall and exact time of beginning and end of each rain. The 3 recording rain gauges are located as follows: # 1 is on the Davis farm near Little Flock community, # 2 on A.B. Moore's farm on old highway near Troy, and # 3 is on the Martin Zabcik farm near Zabcikville. The 15 other non-recording gauges are located on the following farms:

Mrs. C.H. Dyess	Stringtown
Frank Mares	North of Oscar
Leo Sana	Doubleheader
J.G. Kelley	N.W. of Temple
William F. Brown	S. of Troy
W.M. Phillips	N.W. of Troy
R.I. Melton	E. of Moody
V.A. Spohn	Shiloh Church
C.H. Beckerman	Bottoms Store
Howard Linn	Oenaville
T.A. Earnhart	N.E. of Oenaville
Thomas B.R. Gwin	Beanhill
F.J. Marek	Seaton
Jerry M. Beran	Airville
Henry Hoelscher	Cyclone
B.J. Bedrick	S.W. of Meeks

Farmers and others interested are cordially invited to use these gauges.



PERMANENT PASTURESA. PREPARATION OF SEED BED

In removing land from cultivation and starting permanent pasture the first step is to remove all weeds and brush. When the land has been in cultivation one should use disk harrow or spike tooth harrow as may be practiced in scratching the soil before planting. When using disk harrow the disks should be set straight. In case land is flat broken use roller or drag so as to have firm seed bed, which is very necessary for good germination of grass seed.

B. TIME AND SOWING OF SEED

In most cases all pasture seed should be planted from Sept. 1st to Nov. 15 or as soon as moisture will permit.

It always pays to use well rotted barnyard manure in sowing pasture seed. In case of very poor land it is foolish to seed without it. In seeding with barnyard manure always mix seed and manure by the following method: spread a layer of manure about four inches thick, scatter seed on the first layer of manure, apply another layer of manure, then seed, the amount depending upon the number of acres to be planted.

When removing seed mixture always take from rear of wagon bed with shovel and place in small piles about six to eight feet apart. However, very good results are sometimes obtained by scattering seed and manure over area to be put in pasture and then use spike tooth harrow or drag to insure firm seed bed.

## IN PLENTY

You older men of surplus years,  
With thoughts close-packed between your ears,  
Recall, perhaps, the days of yore,  
When even the sloping hillsides bore  
In plenty.

In forty years or so you found  
How unsubstantial was the ground;  
Day by day and week by week  
It washed into and down the Creek  
In plenty.

The soil that once had grown the bales  
So large they broke the ginner's scales  
Struggles now with a scrawny weed  
On which the weevils fain must feed  
In plenty.

Now you would like to save your land  
Before it's gone, but understand  
We're standing pat, it's up to you,  
For, Brother, we've got work to do  
In plenty.



The Philosopher Allows:

"It looks to me like a man that's been farming as long as I have and won't sign up with the Soil Erosion boys is kinda like the nigger's mule--- he's either blind or else he don't give a d-----."